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ROLE OF RADIO IN AGRICULTURAL ADVISORY SERVICE IN WESTERN REGION OF CAMEROON

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ABSTRACT

The objective of this article was to analyze the contribution of radio in agricultural advisory services and agricultural extension in the Western region of Cameroon. The study was focused on 3 of the 8 divisions of the region, those having around 70% of the radios of the region were particularly investigated, and it is about Menoua, Mifi and Bamboutos Divisions. With the help of structured questionnaires and interview guides, surveys were conducted with 13 radio broadcasters, 17 agricultural advisory agents and extension workers and 35 farmers' organization managers. The findings showed that the region had 24 radio stations, divided into 3 main categories: public (12.5%), private (41.66%), and community (45.83) radio stations. The emergence of these radio stations had several reasons, amongst which the main were: the need to promote the activities of the rural areas (85%), inform, sensitize and advice the farmers (15%). Radio broadcasters are predominantly male (85%) having completed higher education (85%). They were made up of trained journalists (54%); on-the-job facilitators (31%) and agricultural technicians (15%). The content of the proposed programs covered training (50%), the raising of awareness (18%), advertisement (17%) and miscellaneous information (8%) on agricultural development and practices. The programs involved two categories of actors: farmers whose interaction with the radio is either by call (47%), text messages (7%), or by listening (46%); then the agricultural advisory agent for whom it was a flexible and indispensable tool for the execution of their various activities. Despite some infrastructural and logistical difficulties being encountered, the radio had effectively contributed to the improvement of agricultural activities in the region.

Keywords: Radio, agriculture, livestock, agricultural advisory services, extension.

INTRODUCTION

Agricultural extension refers to a two-way process for the transmission of knowledge, involvement and decision-making by different actors with the aim of improving the living conditions of the farmers. It includes technical knowledge which involves facilitating, negotiating and assisting various actors to improve market access, manage evolving risk patterns and the protection of the environment (Christoplos, 2011). It is carried out within a complex system which involves old and new service providers, as well as information and communication technologies (telephones, cell phones, internet, radio and television). The use of radio for development has evolved with the concept of development. In the 1960s, the media were developed in newly independent countries to meet economic and social demands. Initially, they were

conceived as a means of education and supervision to overcome the shortcomings of agricultural supervisory institutions. It must be said that even if these radio stations could easily reach a large number of farmers, they had no means of assessing the admissibility of their information. Communication was one-way only (Boulc'h, 2003), hence the concern to think of a type of radio specific to rural populations with simpler means of admissibility. According to Lakhdar (2008), the radio has been and remains an economic, commercial, political and social challenge at the size of the formidable means of communication it constitutes since the creation of this media in the 1920s in the industrialized countries. Rao (2015) also affirms that radio seems to be the most ancient and popular tool of information technologies in the developing world, partly due to its accessibility and

affordability. This situation has favored the introduction of the rural radio, which is a sub-division of the national radio created and managed by the rural population to meet their needs. More specifically, it refers to a term which geographically describes the development of people connected together across remote communities to share knowledge and information about their culture and that of the world (Chapman *et al.*, 2003). Faced with the inability of extension workers and the need to cover the greatest number of farmers, new means of accompanying farmers are being made available. The contribution of media in the process of development in developing countries is no more to be demonstrated. The nature of the media tool used in mobilizing populations for developmental issues are designed to disseminate information and, in some ways, can also play an important role in educating farmers on agricultural issues, (Mugwisi, 2015). This is a similar situation to that of Malawi where Chapota *et al.* (2014) found that the ratio of the population to the national household census in 2008 indicated that 64.1% of households have an average of one radio and this regularly reaches 70% of rural households. It is therefore true that to be more profitable, radio must go on with some other tools such as mobile phone to serve as a two-way platform. It can serve as a means of exchange between farmers, researchers and extension workers on issues of general interest. The potential of radio is that it brings farmers closer to agricultural specialists and encourages participation in the programs broadcasted. Moreover, being promoted in national languages, radios have an added advantage in that it is also easily accessible by the less literate populations. "They replace formal education in some ways" (Rao, 2015). In the Western region of Cameroon there is a great coverage in terms of radios (24 radio stations). This broad radio coverage should therefore be able to promote a new and effective form of agricultural extension and advice. Unlike former service providers (state and politicians), information and communication technologies in general and radios in particular have encouraged a greater involvement of stakeholders in the process of extension and advice. In response to this situation, it is therefore pertinent to analyze the actual contribution of radio to extension and advisory service in the Menoua, Mifi and Bamboutos Divisions. In order to do so, the first step will be to draw up an inventory of the radio stations in the Western Region, to identify the factors that have led to their emergence, to draw up the

socio-professional profile of the radio presenters, to analyze the broadcast content of radio programs and their effects on farmers and their production.

MATERIALS AND METHODS

This study covers 3 of the 8 Divisions in the Western region of Cameroon: Bamboutos, Menoua and Mifi. The choice is made because those areas regroup a majority (70%) of the radio stations being broadcasted in the region and thus, allows efficient use of resources and time. Three main categories of people were involved in the study: the radio broadcasters, particularly of agro-pastoral programs who were interviewed at the radio stations; agricultural supervisors (extension workers or agricultural advisers) interviewed at the level of the Divisional delegations and agricultural districts of the region; and finally, leaders of farmers' organizations or their members who were individually interviewed at their place of work. The choice of the radio broadcasters was made regarding their distinguished responsibilities at the radio station, while priority was given to those presenting agricultural programs. The advisers and extension agents on the other hand, were chosen randomly during the training session organized by the divisional delegation of agriculture for the Menoua Division. The leaders of the Peasant Organizations were selected based on the snowball approach. Two main types of data were obtained: the secondary data which were mainly obtained from the review of documents from the Central Library of the University of Dschang, the archives of the Agricultural Delegations and radio stations. These have facilitated our task in the definition of concepts and theories for the understanding of the subject matter; and the primary data which were obtained with the help of questionnaire and interview guides being administered using the face to face interview approach, with 13 radio broadcasters (7 in Menoua, 5 in Mifi and 1 in Bamboutos), 17 extension workers and advisers from Menoua and 35 leaders of Peasants Organization of the same Division; with regards to the existing number of radios emitting agricultural information.

Qualitative data were processed using the thematic approach while quantitative data were manually stripped, codified and analyzed using statistical software such as SPSS (Statistical Package for the Social Sciences) and Microsoft EXCEL. These analyses were supplemented by direct observation in the field during the presentation of radio broadcasts.

RESULTS AND DISCUSSIONS**Radio stations in West region of Cameroon:****Distribution of radio stations in the Western region:**

The West region of Cameroon has 24 radio stations

which are located in the eight Divisions of the Region: Menoua, Mifi, Bamboutos, Haut-Nkam, Noun, Ndé, Hauts Plateaux and Nkoug-Khi (Table 1).

Table 1. Location of existing radios in the Western region of Cameroon.

Division	Radio station	Localisation	Count
Ménoua	Radio Yemba	Dschang	4
	Radio Ngieh-lah	Dschang	
	Radio Nkwallah	Dschang	
	Radio Universitaire Campus	Dschang	
Mifi	Dunamis FM	Bafoussam	11
	Radio Batcham	Bafoussam	
	RUNA FM	Bafoussam	
	Radio communautaire de Bafoussam II	Bafoussam	
	Bonne Nouvelle	Bafoussam	
	Radio Universitaire Tankou	Bafoussam	
	Vox Ecclesias	Bafoussam	
	Radio Star	Bafoussam	
	Poala FM	Bafoussam	
	Station Regionale de la CRTV	Bafoussam	
	Sweet FM	Bafoussam	
Bamboutos	Radio Ngiemboon	Batcham ville	2
	Radio Batcham	Batcham ville	
Noun	Radio communautaire du Noun	Foumban	1
Nde	Radio communautaire Medumba	Bangangte	2
	Sweet FM	Bangangte	
Haut-Nkam	Radio fotouni	Fotouni	2
	Radio Sidar	Bafang	
Hauts Plateaux	La voix des hauts plateaux	Baham	1
Nkoug-Khi	La voix des Bandjouns	Bandjoun	1
Total			24

According to the data in Table 1, majority of Divisions (63%) have at least two radio stations. The Mifi and the Menoua are the two Divisions with the largest number of radio stations, 11 and 4 respectively. The 11 radio stations in the Mifi Divisions are installed in Bafoussam, capital of the Mifi Division and headquarters of the West region. While in the Menoua Division, the 4 radio stations listed are also located in the city center of Dschang, the Divisional headquarter. These two cities with the largest number of radio stations are the most populated cities in the Western region. Bafoussam has a total population of 239,287 inhabitants according to the 2005 census while Dschang, which is a university town,

had 76,524 inhabitants in 2012. The importance of the audience could justify these radio stations in these two cities. The introduction of these radio stations in towns or near the big cities has facilitated the movement of various animators who are experiencing more and more difficulties to get to the workplace because of limited means. In general, to compensate the situation, radio stations are mostly located in the city center, and more precisely in the Divisional headquarter. An overview of the distribution of radios in the Western region shows that each Division has at least one radio station, which adequately demonstrates the importance of radio coverage in the region.

Typology of radio stations in the Western region of Cameroon:

The Western region has three main types of radio stations: Community radio, public and private radio stations. Community radio stations are nonprofit stations created by communities and at the service of these communities. They strive to promote the cultural values and the development of these communities. The study shows that 45.83% of the radio stations were community radios being identified in the localities of Dschang, Bafoussam, Bandjoun, Batcham, Baham and Bafang, and located in peri-urban areas. They broadcast in both official languages (English and French) and in the local languages. This particular type is likely to reach the greatest number of listeners, since the programs are either presented in local languages or translated and the populations in rural areas, particularly farmers are often more willing to listen and participate in programs of this nature. The principal aim of community radio stations is therefore to contribute to the valorization of local products, development of an awareness-raising program on price protection of basic foodstuffs, stabilization of local agricultural prices and the existence of opportunities such as the valorization of locally consumed products.

Private radio stations: they are created by individuals in order to generate income from the sale of their services. Among these, religious private radio stations are distinguished and the topics are 80% religious. They are therefore private commercial radio stations created essentially to generate income. This represents 41.66% of the total sampled radio stations. It turns out that, there are more commercial radio stations that offer the producer a wide range of services, especially in local, national and even international markets. They are generally the main providers of producers with trends in agricultural information, new products, and new cropping techniques. Public radio stations are the least represented (12.5%). These are state-run radio stations. They have the responsibility of transmitting information on agricultural policies and the evolution of national markets to farmers. The low proportion of the audience can be explained by two fundamental reasons; they are radio stations that usually broadcast in the national languages, and do not often take into consideration the specific concerns of farmers. Moreover, the broadcasting of programs on demand, and the possibilities for interactions are practically limited. This is the principal reasons why farmers lose interest on them.

Farmers are therefore more inclined to listen to community radios rather than to public and private ones. This is due to the fact that they have a common tendency to report in the different local languages. And it should be noted that farmers especially the old and women say they feel at home when they recognize their languages. This corroborates with the findings of Chapota *et al.* (2014) which shows that in Malawi, the radio stations mostly listened by farmers are those that have been developed with and for farmers: a “farmers first, farmers throughout and farmers last” approach.

Factors for the emergence of radio stations at the service the farmers in Western region of Cameroon:

Before the 2000s, radio stations were still very little known. It is with the development of towns and various institutions, the increase in the population that the need the radio stations have been felt the more. The existence of a university in the town of Dschang, for example, has greatly contributed to the motivations associated with the creation of the first radio station in the Menoua Division (radio Yemba). It was set up in 2003 with the aim of ensuring infrastructural and socio-cultural development. It should be noted that just after the 2000s, at least one radio station was created every two years. The main reason for its rapid creations was the need to contribute to the opening-up of communities. Their emergence was based on three fundamental factors.

Community development: The main reason for the creation of 50% of the radio stations in the region was for the desire to promote socio-cultural development of these communities. Indeed, in most villages, people organize themselves into development committees to find ways of opening up their different sectors. The aim was to promote the development of grassroots community as well as development of local languages. The radio stations born with this objective are mostly community radios. They are the means of popularizing through the airwaves, their local language which is a cultural element at the national and international levels.

Need to inform, educate and entertain: The study showed that 33% of the radio stations in the studied Divisions were created in order to inform, educate and entertain the population. The desire to live in the knowledge of current affairs, disturbances and changes taking place within the country and even at the international level required these communities to acquire the necessary means. People are interested and

need information in areas such as political, sports and health news. Brief on real time news, the radio has become a conscientious weapon developed by proponents to break away from isolation and reduce deviant behavior (for example, throwing garbage out of rubbish bins or on the sidewalk). The need for entertainment is not to be left out as more and more radio stations give time for interactive games, music tracks and many more.

Need to develop and promote academic activities:

Amongst the radios surveyed, 17% were designed to serve as didactic materials at the grass-root level to facilitate teaching in a specific field. This is the case of the University radio of Dschang and Nanfah in Bafoussam initiated respectively to accompany students

and pupils in the popularization of the results of agricultural research, in the practical courses of journalism and many other trainings. They also offer debates on agricultural issues, enabling various actors' concerned (researchers, extension workers, students and farmers) to exchange views on issues of common interest. The pertinent reason for using radio in extension and advisory services originated from the understanding that it is an excellent, cost effective means of sharing knowledge, building awareness, facilitating information on decision making and supporting the adoption of new practices by small scale farmers (Farm Radio International, 2007).

Analysis of socio-professional characteristics of radio broadcasters:

Table 2. Socio-professional characteristics of radio broadcasters.

	Age			Gender		Marital status		Level of education			
	30 to 40 years	40 to 50 years	50 to 60 years	Male	Female	Married	Single	Ordinary level	Advance level + 2	Bachelor	Master
Training journalists	3	1	3	2	5	6	1	0	2	4	1
Radios Animators/ broadcasters	3	0	1	0	4	2	2	0	1	3	0
Agricultural technical agents	0	1	1	0	2	2	0	2	0	0	0
Total	6	2	5	2	11	10	3	2	3	7	1

Professional profile of persons responsible for conducting agricultural programs:

Three categories of people presenting agricultural programs have been identified: training journalists, trained journalists and agricultural technical agents (facilitators and agricultural workers) as presented on Table 2 above. Trained journalists accounted for 54% of the total population, which is 7 out of 13. These were broadcasters who had received training in the field of communication in higher educational institutions in order to obtain a professional degree in journalism. The radio broadcasters, numbering 4 or 31%, were those who have not been to a professional school of journalism and who did not have a professional degree in communication but were trained at the radio level by the "Learn by doing method". The two agricultural technical agents represented at 15% are those who have received

training in the field of agriculture in general. Each of these categories had originality in the quality of its presentation. The journalists presented fluidly, thanks to their training, while the technical agents used some key terms in a detailed and simplified manner. The radio broadcasters met are those who make use of the local languages. These are people from the community who want to share their experience. All these variables therefore have an influence on the degree of admissibility of the information transmitted. The results are quite different from those from Mozambique where Chapota (2015) found that none of the employees at the radio station received training in agricultural programming skills, apart from the normal basic journalism training. Recently, it has been discovered that broadcasters have begun to play a more active role in creating content and conducting on-farm interviews

with farmers using Mp3 recorder, and for a global efficiency of radio broadcast, they started working in collaboration with extension services agents, researchers, government, and farmers (Chapman, 2003).

Age of broadcasters: Age is a defining indicator that is likely to influence the content and the ability to transmit information. The ages of the radio broadcasters varied between 30 and 60 years. According to the distribution, the variation is between 30 and over 50 years of age. It is included that both the youth and elderly people with predominance (46%) are found in the 30-40 age group. Those responsible for the presentation of agricultural programs in the study area were therefore a combination of both the young and elderly people. Older men of 50 years and above were encountered in the Mifi and Bamboutos Divisions. On the contrary, the broadcasters in the town of Dschang in Menoua Division were mostly young people, probably because majority of its population were of youthful age consisting mainly of students.

Radio Workforce by Gender: The activities of radio broadcasters in general, and that of agricultural broadcasters in particular are exercised by people of both genders. But the study showed that it is a profession, mostly dominated by men. Indeed, the majority of the activity (85%) was carried out by men.

Men had more inclination for this form of communication (communication via radio) than women.

Level of education: The level of education is decisive in the profile of broadcasters, as this occupation sometimes requires a certain level of education. The majority (85%) of those responsible for animation had at least two years of higher education. The most educated had at least five years of higher education. This enabled us to note that the activities of radio broadcasters were activities carried out by people with a high level of education. People with at least an Advance level + 2 years of higher education were mainly journalists. This variable could also affect the admissibility of the transmitted message. The more one is educated, the more he/she could convey a message so as to be better understood.

Analysis of agricultural radio broadcasts available in the Menoua, Mifi and Bamboutos Divisions.

Identification of radio stations with agricultural radio broadcasts: The radio stations listed in the different areas of the study showed a fairly wide range of agricultural radio broadcasts and various names which nevertheless attract interest. It is often important to identify radio stations beforehand, that will ensure a wide dissemination of information before deciding on the broadcast of an agricultural presenter. Detail of radio stations and their broadcasts is given in Table 3.

Table 3. List of radio stations with agricultural radio broadcasts.

No	Location	Radio station	Frequency	Radio broadcasts
1	Menoua	Radio Yemba	98Mhz	« Ashuygcy » Fréquence agricole (reveil du paysan)
2		Radio Nghie-lah	104.25Mhz	Tribune du paysan
3		Radio Campus	95.1Mhz	Agro-Mag
4		Radio Nkwalah	100.0Mhz	Espace agricole
5	Mifi	Radio communautaire de Bafoussam IIe	94.3Mhz	Monde rural
6		Radio Star	95.5Mhz	Agric-infos
7		Station Régionale de l'Ouest (CRTV)	93.5Mhz	Ouest agro-pastoral
8		RUNA FM	102.0Mhz	Farmers corners
9		Radio Batcham	96.7Mhz	Terre de chez nous
10	Bamboutos	Radio Ngiemboon	92.5Mhz	Grenier du Monde Rural Apprenons à cultiver
Total		10		12

Table 3 showed that of total 10 radio stations broadcasting agricultural programs, 4 are in the Menoua Division, 5 in the Mifi and 1 in the Bamboutos. With 12

agro-pastoral programs, thus, 5 in the Menoua, 6 in the Mifi and only one in the Bamboutos. greater than half (56%) of radio stations had at least one agricultural

broadcast. Every Division had at least one radio station with an agricultural broadcast. Among the radio stations broadcasting this type of programming, we observed all categories (community, public and private) amongst which 50% are community radio stations. Actually, they are the ones that mobilized a large part of the audience in rural areas, and their definition are "rural radio at the service of rural communities".

Content of programs: The subjects generally discussed during the presentation of agricultural programs are chosen according to the agricultural calendar and concerns: Training in cultural techniques (33%), which is on the production itineraries of certain types of crops. It goes from the techniques of ploughing, planting of crops such as onions, cabbages, watermelons, soybeans, etc., from their maintenance to the harvest period and also on techniques of the conservation of these crops through; Training in the manufacture of fertilizers based on household waste (17%); Information on open days and trade fairs (8%); Advertisements on fertilizers available in the market (17%, method of use, period of use etc.); Awareness of risky behaviors in the field (17%) which involves presentations on the disadvantages of bush fires for example and lessons on appropriate farming techniques.

Mode of design of programs or radio programs: The

process of designing radio broadcasts is often participatory, and very often requires the collaboration of all stakeholders in the agricultural sector (communication specialists, agricultural experts, extension workers and farmers). Researchers provide innovations, and new technologies that support better productivity and generate gains for farmers. Communication specialists open paths that enable farmers to be at the forefront of agricultural information, and move closer to certain markets (local, regional, international). Extension staff are often linked to public agencies and non-governmental organizations (NGOs) to act as relays. Initial assessments of auditors on preferred formats, schedules and information needs, help to better define programming in response to farmers' needs. The time, duration and period of programs are carefully thought-out when planning extension services, as some time slots are better than others for farmers, including evenings and weekends, when they are at home and have completed all their work.

Organizational chart of agricultural broadcasts: In this part, the elements to be presented are the presentation days, the hours, their durations, the language and the Rebroadcast days, which are very decisive in the frequency of listening, and the mobilization of the audience as shown in Table 4.

Table 4. Schedule of broadcasting of agricultural programs.

Title	Days	Hour	Duration	Language	Rebroadcast
Monde rural	Monday	18h30-19h	30min	Baleng/Bapi/ Bamougoum	Saturday same hour
Terre de chez nous	Monday	22h-23h	1h	French	Same day, same hour
Agric-info	Friday	16h-17h	1h	French	Same day, same hour
Grenier du Monde Rural	Tuesday	5 :30-6pm	30min	French	Sunday 23h-23h30
Ouest-agro-pastoral	Thursday Friday	8 :30-9pm	30min	French	Thursday same hour
Farmers corners	Monday	7 :30-8pm	30min	English	Sunday 6:19pm
Apprenons à bien cultiver	Thursday	5 :30- 6am	30min	Ngiemboon	
Espace agricole	Wednesday	2 :15pm	1h	Yemba	
Tribune du paysan	Wednesday	6:30-8pm with 30min reserved for news	1h 1h30min	Yemba	Saturday 2:15pm
Réveil du paysan	Tuesday	7 :30-8 :30pm		French/ yemba	
Agro-Mag		8 :30-10pm		French	

According to the data in Table 4, the radio broadcast addressed to the rural areas were presented between the time intervals 2-11pm. There are four times slots reserved for them: 2-6pm, 6-8pm, 8-10pm and 10-11pm. They are presented on average twice a week (broadcast and rebroadcast), and usually at the end of the day, which corresponds to the hours when each farmer is likely to be at home or in a place of rest or relaxation (bars). Rebroadcasts give another opportunity for absent farmers to catch-up in case of unavailability on the day of broadcast. 42% of the programs presented are in the local languages and thus allow people of advanced age (old people) to feel involved. In Menoua, for example, the majority of respondent farmers prefers radio stations that broadcast in the local language this meet the conclusions of Chapota (2015) which indicates that in Mozambique, the best moment to capture a large audience in rural areas were summarized in three main periods; early in the morning between 5-6am, when farmers are awake going to the farms; early afternoon between 1-2pm, when farmers are resting after the launch break and evenings slots between 7-8pm, when the whole family is at home.

Terms and conditions for participation: Amongst the farmers interviewed in the Menoua Division, it was found that 77% of those who listen to radio had already followed an agricultural program, contrary to 23% who had never followed any program. Amongst those who had already attended an agricultural program, 56% (ie 15 farmers) were actually participating in these programs. The forms of participation in these broadcasts do vary and are function to the possibilities offered. Others prefer calls during the show while others prefer to listen attentively while others participate through SMS (Table 5).

Table 5. Distribution of the farmers in terms of their participation.

Mode of participation	Frequency	Percentage
By calling	7	47
Listen exclusively, but attentively	7	46
By sending SMS	1	7
Total	15	100

Amongst the farmers participating in these programs, 47% reported that they did so by cellphone. Their calls

testify the relevance of the subjects mentioned, that is those who deal with practical subjects. For programs with participation opportunities, the broadcasters estimate the number of calls between 4 and 5 calls for duration of 30 minutes of broadcasting. There are these calls to verify the admissibility of the information and also to evaluate the work done. They also show the interest that these farmers have in these programs. However, the messages are not to be outdone, as the frequency of texts sent by farmers reflects the interest given to agricultural programs. Listening remains the most complex and difficult component to measure, especially when the impact of this action is assessed with certainty. Nevertheless, the observations and statements of some farmers allowed us to observe that this was another significant form of participation, making those who found themselves passive auditors. It is therefore true that these three modes of farmer's participation give an approximate idea to the auditor, but a complete evaluation by the publisher becomes more complex. This is in line with the conclusions of Kumakana (2008) which stated that "although institutions are aware of the need for continuous monitoring of the content and impact of agricultural programs at the farmer level, there are few specific mechanisms in place for such evaluations".

Effects of the transmission of radio information to rural actors: This section consists of analyzing the relationship between farmers, advisers and extension workers with regards to the transmission of agricultural information through radio broadcast.

Effects of agricultural radio broadcasts on farmers: The programs presented on agriculture are of significant importance to the listening farmers. They are vectors of change because they shape farmers by allowing them to change their behavior on agricultural practices and improvements in the field of ancient agricultural techniques. The presented agricultural programs allow farmers to act after training and this raises their awareness as informed professionals and in an autonomous way (risk management). Producers have benefited for example, from the training offered by the Nkwallah radio in Dschang on techniques of making fertilizers based on household waste (composting practices). They also gave farmers the opportunity to intervene during the broadcasts in order to present their difficulties and immediately obtain proposals for appropriate solutions. It is also the means and the

opportunity to follow the points of view and testimonies of other fellow farmers. They inform about the open days and fairs exhibitions on agriculture, allow the actors of the rural area to become acquainted with the activities that can benefit them. Rao (2015) found that in Ethiopia, over 50 percent of farmers who listened regularly to agricultural programs increased their knowledge on cultivation.

One of the major findings was that the use of radio in extension and advisory services is very effectively increasing farmers' knowledge, encouraging the adoption of agricultural improvements, and fostering a general change in attitude about making future changes (AFRRI, 2010).

Relevance of radio to extension workers and advisors

Save of time: Using radio as a means of communication avoids long hours and days of hard work. This is the opportunity to take advantage of and to go about other occupations. One respondent quoted to this effect as follows: "It is true we have motorcycles to meet the producers, but know that it takes us a whole day to meet and talk to six farmers. We would still need to find them at home despite having called for a meeting with them. We think that even if many are in the fields, a large re-broadcast of a message on the radio would allow us to avoid these long walks"

Depending on the target size: In addition to being time-saving, radio communication has the ability to reach a large number of producers in a short period of time. However, the nuance that exists is the exact definition of the main target, because radio does not have the ability to circumscribe its target. It is true that it reaches a large number of listeners, but are they really people who are really concerned by the program in question? Another point is that the time it takes for information to reach the main target despite rebroadcast does not allow agricultural advisers and extension agents to achieve their objectives on time, as many farmers follow the radio in a random way.

Difficulties encountered by radio stations and during the presentation of agricultural broadcasts:

Radio stations in general face material and financial problems. Production equipment is insufficient and poorly maintained. They are in a deplorable state and without any source of maintenance. These materials are mostly those that were installed when the radio was created. There is a lack of financial resources to update

them and all failures are managed in an archaic way. Radio external staff are irregular in their services, many complain of being poorly paid. This conclusion is consistent with that of Kumakana (2008), who states: Most broadcasters do not have an employment contract and do not have a regular monthly or daily salary to meet their daily needs and those of their families. This explains in most cases the laxity of some of them in their involvement in the workplace. In terms of the presentation of agricultural radio programs, the main problem remains the availability of specialists in the field to teach producers about agricultural practices. Knowledge of local languages is another obstacle. People sometimes need to be clarified in the local language and it is not always easy to meet journalists who can do it properly.

CONCLUSION AND RECOMMENDATIONS

In line with the development of agricultural advisory services, the main challenge remains the capacity to inform, train, monitor and raise awareness of almost all farmers in their various localities. The media, and more specifically radio, are positioning themselves as a tool, an indispensable means of disseminating information, particularly agricultural information in rural areas. Although the Western region of Cameroon has good radio coverage, it is above all the content of the programmes broadcast and the profile of the broadcasters that justify radio's important contribution to the development of agricultural advisory services. It is true that radio broadcasts cannot grow crops. However, the combination of radio campaigns, local monitoring and support, adequate administrative and financial support can inform farmers, entertain them, bring them together to promote unity and thus contribute to the necessary changes within the community. It is important not to overestimate the role of radio in the development process.

Above all, we must be aware of the limitations of radio as a means of transmitting knowledge and know-how. Radio is a tool that can raise awareness about difficulties and motivate action. Second, to achieve positive results, the relay must be taken by extension workers and development partners. If these two elements can be combined, they will be a powerful tool for agricultural and rural development.

REFERENCES

African Farm Radio Research Initiative (AFRRI). (2010). What We Did and Learnt About Participatory

- Farm Radio Programming. Dissemination paper presented during the district-level dissemination.”
- Boulc'h, S. (2003). Radios communautaires en Afrique de l'Ouest: Guide à l'intention des ONG et des bailleurs de fonds. Hors-Série n°5 | Avril 2003, COTA asbl | 7, rue de la Révolution | 1000 Bruxelles. p 151.
- Chapman, R., Blench, R., Kranjac-Berisavljevic, G. & Zakariah, A.B.T. (2003). Rural radio in agricultural extension: the example of vernacular radio programmes on soil and water conservation in n. Ghana. Agricultural Research and Extension Network. Paper 127, p 12.
- Chapota, R. (2015). Rapid Assessment on the Use of Radio in Extension and Advisory Services in Mozambique, Report produced as part of the United States Agency for International Development (USAID) project “Modernizing Extension and Advisory Services” (MEAS), p 41, www.meas-extension.org.
- Chapota, R., Fatch, P. & Mthinda, C. (2014). The Role of Radio in Agricultural Extension and Advisory Services: Experiences from Malawi. MEAS Case Study#8, February 2014, p11. www.measextension.org/meas-offers/case-studies.
- Christoplos, I. (2011). Mobiliser les potentialités de la vulgarisation rurale et agricole. FAO, Forum mondial pour le conseil rural, p 68.
- Kumakana, H. (2008). La situation des Radios communautaires en République démocratique du Congo. Publié par L'ARMARC, p 3.
- Lakhdar, A. (2008). Contribution de la radio locale dans les activités de vulgarisation agricole. Séminaire « vulgarisation et animateurs radios ». ITMAS de SETIF 23 et 24-06-2008, p 23.
- Mugwisi, T. (2015). Communicating Agricultural Information for Development: The Role of the Media in Zimbabwe. International Journal of Libraries and Information Studies, 65(4), 281–299, DOI: <https://doi.org/10.1515/libri-2015-0094>.
- Perkins, K., Huggins-Rao, S., Hansen, J., Van Mossel, J., Weighton, L. & Lynagh, S. (2015). Interactive radio's promising role in climate information services. Farm Radio International concept paper. CCAFS Working Paper no. 156. CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org. p 31.
- Rao, S. (2015). Using radio in agricultural extension. Note 18. GFRAS Good Practice Notes for Extension and Advisory Services. GFRAS: Lindau, Switzerland, p 4.

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